

RESPONSE TO CLAIM REJECTIONS UNDER 35 §USC 102

The Examiner has rejected claims 1-7, 10 and 11 as being anticipated under 35 USC 102(b) by Patent Abstract of Japan vol. 1996, no. 12, 26 December 1996(08211042). Applicant respectfully traverses this rejection.

Anticipation requires the presence in a single prior art reference disclosure of each element of the claim under consideration. *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). The Japanese Patent Abstract neither expressly or inherently contains, within its four corners, every element of the claims in question. Specifically, the Japanese Patent Abstract does not have a proton donating step which does not make the solution acidic as does the present method.

The Japanese Patent Abstract neither expressly or inherently contains, within its four corners, every element of the claims in question.

The present invention is a method for measuring chlorine content in a solution. The method of measuring this chlorine content comprises the steps in Claim 1:
(a) modifying a solution comprising chlorine and water to contain a proton donating compound, without lowering the pH of said solution to the acid range and
(b) measuring the concentration of chlorine in said solution.

In contrast, the Japan Patent Abstract specifically lowers the pH of the sample water in order to make the water acidic: "Sample water treated with chlorine is supplied to an overflow tank 13 through sample water supply pipelines 19,15 and a dilute sulfuric acid soln. 35 is poured into the upper part of an acidity adjusting tank 5 through a diffuser 43 **to make sample water acidic.**"

This step used by the Japanese Patent Abstract is exactly what the applicant's method prevents: "... the invention provides a method of measuring chlorine content in a solution **without lowering the pH of the solution to the acid range** by modifying a solution containing chlorine and water to contain a proton donating compound." *See Application, page 2, line 22 – 25.* In the applicant's unique method, even with the addition of the proton-donating compound, the pH is about 8.8. *See Claim 7.*

Although an acid is any substance that donates a proton, the mere addition of a proton donor does not make a solution acidic. In the present invention, as long as there is an excess of protons, the chlorine content is measurable, regardless of its form. *See Application, page 4, line 21 – 22.*

Therefore, the Japanese Patent Application does not expressly or inherently contains, within its four corners, every element of the claims in question. In fact, the Japanese Patent Abstract writes away from the steps of the present method.

RESPONSE TO CLAIM REJECTIONS UNDER 35 §USC 103

The Examiner has rejected claims 8 and 9 under 35 §USC 103(a) as unpatentable over Patent Abstract of Japan Vol. 1996, No. 12, 26 December 1996 (08211042) in view of Girvan et al. (US Patent No. 6,022,480). Applicant respectfully traverses this objection and requests that the Examiner reconsider and withdraw the above rejection of the claims in view of the following:

The present invention relates to a method of measuring chlorine content in a solution without lowering the pH of the solution to the acid range by modifying a solution containing chlorine and water to contain a proton donating compound. The advantage of this method is that the problems associated with the addition of pH-lowering reagents into a chlorine detection system, and also avoids the problems

associated with stability, toxicity, storage and shipping of such pH-lowering reagents.

See Application, page 4, lines 22-25.

It would not have been obvious to a person skilled in the art to have put the Japanese Patent Abstract and the Girvan patent together.

Neither the Japanese Patent Abstract nor Girvan et al. '480 teach the above-cited limitation of measuring chlorine content in a solution without lowering the pH of the solution to the acid range or using a solution of sodium tetraborate decahydrate.

Contrary to the Examiner's discussion on page 6 of the Office Action, the Japanese Patent Abstract teaches a method to measure chlorine by a process which requires sample water treated with chlorine being poured into the upper part of an acidity adjusting tank through a diffuser "to make sample water acidic" as contrasted to the present method wherein chlorine measurement may be made without making the sample acidic.

Girvan teaches a method for treating a standing water system with an admixture comprising calcium hypochlorite and borate salts and acids. When the admixture is placed in water, the composition forms a briquette, which lasts about two weeks, for providing free chlorine to the system and stabilizing the pH. *See Column 8, lines 18 –31.* Girvan uses sodium tetraborate decahydrate as a borate salt in his method.

In the present application, the proton donating borate salt may also be sodium tetraborate decahydrate. However, in contrast to the method of Girvan, in the present invention the sodium tetraborate decahydrate must dissolve immediately into the solution being measured for chlorine concentration. In the Applicant's method, the proton donor sodium tetraborate decahydrate is formed into a stable aqueous reagent solution to improve solubility, providing a more than four fold increase in total borate concentration. *See Application, page 12, lines 4-6.*

It would not have been obvious to a person skilled in the art to have put the Japanese Patent Abstract and the Girvan patent together. The Japanese Patent Abstract does not disclose a similar method to the present application for measuring chlorine in a solution. Nor would the Japanese Patent Abstract method for measuring chlorine concentration use a solid, long term dissolving sodium tetraborate decahydrate. It would not have been obvious to use a long-term dissolving sodium tetraborate decahydrate briquette, or any other proton donor, in a method requiring the proton donor to go quickly into solution for chlorine measurement.

SUMMARY

Applicant has herein responded to the Office Action rejection based on obviousness under 35 U.S.C. §102. The Office Action has not established a prima facie case of obviousness as to claims 1-7, 10 and 11. The Japanese Patent Abstract neither expressly or inherently contains, within its four corners, every element of the claims in question.

Applicant has herein responded to the Office Action rejection based on obviousness under 35 U.S.C. §103. The Office Action has not established a prima facie case of obviousness as to claims 8 and 9. As discussed above, none of the cited references suggest or teach the desirability of the combination of all the limitations which Applicant's invention discloses. The mere fact that the art may be combined in the manner suggested by the Office Action does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 23 USPQ2d 1780, 1783-4 (Fed. Cir. 1992). Applicant has created a novel method for measuring chlorine content in a solution without lowering the pH of the solution to the acid range, with a proton donor quickly going into solution in the sample water.

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In view of the reasoning within the foregoing remarks in response, it is respectfully submitted that the claims in the present application are in condition for allowance.

REQUESTS

Applicant respectfully requests Examiner's withdrawal of the previous rejection under 35 U.S.C. §102 and consent to allowance of Applicant's claims 1-7, 10 and 11.

Applicant respectfully requests Examiner's withdrawal of the previous rejection under 35 U.S.C. §103 and consent to allowance of Applicant's claims 8 and 9.

Applicant respectfully requests a telephone interview with Examiner to resolve any questions related to this response.

Respectfully submitted,

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